

What is claimed is:

1. An inventory management method for controlling amounts of stocks, the method comprising the steps of:

storing delivery times and quantities of order lots accepted and restock lead times predetermined every item in a storage;

selecting at least one order lot accepted, having a delivery time within a period from “b” days before to “a” days after a basic time, from said order lots accepted, to set a threshold value $x+y\sigma_1$ (where y is equal to or more than 0) based upon both an average x and a standard deviation σ_1 of quantities of said selected order lot(s) accepted;

classifying at least one order lot accepted having a quantity α of the selected order lot(s) accepted as a normal accepted order lot(s), wherein the α is less than or equal to said threshold value; and

calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

2. An inventory management method for controlling amounts of stocks, the method comprising the steps of:

storing delivery times and quantities of order lots accepted and restock lead times predetermined every item in a storage;

selecting at least one order lot accepted, having a delivery time within a period from “b” days before a basic time to the basic time, from said order lots accepted, to set a threshold value $x_1+y_1\sigma_2$ (where y_1 is equal to or more than 0) based upon both an average x_1 and a standard deviation σ_2 of quantities of said selected order lot(s) accepted, and selecting at least one order lot accepted, having a delivery time within a period from the basic time to “a” days after the basic time, from said ordered lots, to set a threshold value $x_2+y_2\sigma_3$ (where y_2 is equal to or more than 0) based upon both an average x_2 and a standard deviation σ_3 of quantities of said selected order lot(s) accepted;

classifying at least one order lot accepted having a quantity “B”, being less than or equal to said threshold value $(x_1+y_1\sigma_2)$, of the selected order lot(s) accepted, having a delivery time before the basic time, as a normal accepted order lot(s), and classifying at least one order lot accepted having a quantity “A”, being less than or equal to said threshold value $(x_2+y_2\sigma_3)$, of the

selected order lot(s) accepted, having a delivery time after the basic time, as the normal accepted order lot(s); and

calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

3. The method according to claim 1 or 2, wherein said calculating a basic inventory step comprises:

calculating an order point "r" and the basic stock β using following equations:

$$r = cz + m\sigma_4\sqrt{c}$$

$$\beta = r + tz$$

where z signifies an average shipping quantity per day of an order lot, having a delivery time within a period from the basic time to "a" days after, of said normal accepted order lot(s), c represents the restock lead time, t is an order differential time delay, m is equal to or greater than 1, σ_4 signifies a standard deviation of shipping quantities per day of order lots accepted, having a delivery time within a period from "b" days before to the basic time, of said normal accepted order lot(s);

when $d + e \leq r$, where d signifies a present amount of an stock and e represents a quantities on order, calculating a required order quantity "f" using an equation $f = \beta - (d + e - cz)$.

4. The method according to claim 1 or 2, wherein a relationship between said a and b is $a:b=1:1.5-3$.

5. The method according to claim 1 or 2, wherein said "a" is in a range as follows: $5days \leq a \leq 60days$.

6. The method according to claim 1 or 2, further comprising the step of:

setting an alarm criteria range based upon said basic stock β , and monitoring a total of shipping quantities in a period from a basic alarm time to "c" days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning.

7. The method according to claim 6, further comprising the steps of:
setting an alarm criteria range based upon said basic stock β , and
monitoring a total of shipping quantities in a period from a basic alarm time to

“c” days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning; and

recalculating, when the warning is issued, said basic stock and/or said order point to reconfigure them.

8. An inventory management system for controlling amounts of stocks, comprising:

storing means for storing delivery times and quantities of order lots accepted and restock lead times predetermined every item therein;

selecting means for selecting at least one order lot accepted, having a delivery time within a period from “b” days before to “a” days after a basic time, from said order lots accepted, to set a threshold value $x+y\sigma_1$ (where y is equal to or more than 0) based upon both an average x and a standard deviation σ_1 of quantities of said selected order lot(s) accepted;

classifying means for selecting at least one order lot accepted having a quantity α of the selected order lot(s) accepted as a normal accepted order lot(s), wherein the α is less than or equal to said threshold value; and

calculating means for calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

9. An inventory management system for controlling amounts of stocks, comprising:

storing means for storing delivery times and quantities of order lots accepted and restock lead times predetermined every item therein;

selecting means for selecting at least one order lot accepted, having a delivery time within a period from “b” days before a basic time to the basic time, from said order lots accepted, to set a threshold value $x_1+y_1\sigma_2$ (where y_1 is equal to or more than 0) based upon both an average x_1 and a standard deviation σ_2 of quantities of said selected order lot(s) accepted, and selecting at least one order lot accepted, having a delivery time within a period from the basic time to “a” days after the basic time, from said ordered lots, to set a threshold value $x_2+y_2\sigma_3$ (where y_2 is equal to or more than 0) based upon both an average x_2 and a standard deviation σ_3 of quantities of said selected order lot(s) accepted;

classifying means for classifying at least one order lot accepted having a

quantity “B”, being less than or equal to said threshold value $(x_1+y_1\sigma_2)$, of the selected order lot(s) accepted, having a delivery time before the basic time, as a normal accepted order lot(s), and classifying at least one order lot accepted having a quantity “A”, being less than or equal to said threshold value $(x_2+y_2\sigma_3)$, of the selected order lot(s) accepted, having a delivery time after the basic time, as the normal accepted order lot(s); and

calculating means for calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

10. The system according to claim 8 or 9, wherein said calculating means comprises:

calculation means for calculating an order point “r” and the basic stock β using following equations:

$$r = cz + m\sigma_4\sqrt{c}$$

$$\beta = r + tz$$

where z signifies an average shipping quantity per day of an order lot, having a delivery time within a period from the basic time to “a” days after, of said normal accepted order lot(s), c represents the restock lead time, t is an order differential time delay, m is equal to or greater than 1, σ_4 signifies a standard deviation of shipping quantities per day of order lots accepted, having a delivery time within a period from “b” days before to the basic time, of said normal accepted order lot(s);

when $d + e \leq r$, where d signifies a present amount of an stock and e represents a quantities on order, calculation means for calculating a required order quantity “f” using an equation $f = \beta - (d + e - cz)$.

11. The system according to claim 8 or 9, wherein a relationship between said a and b is $a:b=1:1.5-3$.

12. The system according to claim 8 or 9, wherein said “a” is in a range as follows: $5days \leq a \leq 60days$.

13. The system according to claim 8 or 9, further comprising:

warning means for setting an alarm criteria range based upon said basic stock β , and monitoring a total of shipping quantities in a period from a basic alarm time to “c” days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning.

14. The system according to claim 8 or 9, further comprising:

warning means for setting an alarm criteria range based upon said basic stock β , and monitoring a total of shipping quantities in a period from a basic alarm time to “c” days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning; and

reconfiguration means for recalculating, when the warning is issued, said basic stock and/or said order point to reconfigure them.

15. A program for executing an inventory management method for controlling amounts of stocks, said program comprising the steps of:

storing delivery times and quantities of order lots accepted and restock lead times predetermined every item in a storage;

selecting at least one order lot accepted, having a delivery time within a period from “b” days before to “a” days after a basic time, from said order lots accepted, to set a threshold value $x+y\sigma_1$ (where y is equal to or more than 0) based upon both an average x and a standard deviation σ_1 of quantities of said selected order lot(s) accepted;

classifying at least one order lot accepted having a quantity α of the selected order lot(s) accepted as a normal accepted order lot(s), wherein the α is less than or equal to said threshold value; and

calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

16. A program for executing an inventory management method for controlling amounts of stocks, said program comprising the steps of:

storing delivery times and quantities of order lots accepted and restock lead times predetermined every item in a storage;

selecting at least one order lot accepted, having a delivery time within a period from “b” days before a basic time to the basic time, from said order lots accepted, to set a threshold value $x_1+y_1\sigma_2$ (where y_1 is equal to or more than 0) based upon both an average x_1 and a standard deviation σ_2 of quantities of said selected order lot(s) accepted, and selecting at least one order lot accepted, having a delivery time within a period from the basic time to “a” days after the basic time, from said ordered lots, to set a threshold value $x_2+y_2\sigma_3$ (where y_2 is equal to or more than 0) based upon both an average x_2

and a standard deviation σ_3 of quantities of said selected order lot(s) accepted; classifying at least one order lot accepted having a quantity "B", being less than or equal to said threshold value $(x_1 + y_1\sigma_2)$, of the selected order lot(s) accepted, having a delivery time before the basic time, as a normal accepted order lot(s), and classifying at least one order lot accepted having a quantity "A", being less than or equal to said threshold value $(x_2 + y_2\sigma_3)$, of the selected order lot(s) accepted, having a delivery time after the basic time, as the normal accepted order lot(s); and

calculating a basic stock using a predetermined formula from said classified normal accepted order lot(s).

17. The program according to claim 15 or 16, wherein said calculating a basic inventory step comprises:

calculating an order point "r" and the basic stock β using following equations:

$$r = cz + m\sigma_4\sqrt{c}$$

$$\beta = r + tz$$

where z signifies an average shipping quantity per day of an order lot, having a delivery time within a period from the basic time to "a" days after, of said normal accepted order lot(s), c represents the restock lead time, t is an order differential time delay, m is equal to or greater than 1, σ_4 signifies a standard deviation of shipping quantities per day of order lots accepted, having a delivery time within a period from "b" days before to the basic time, of said normal accepted order lot(s);

when $d + e \leq r$, where d signifies a present amount of an stock and e represents a quantities on order, calculating a required order quantity "f" using an equation $f = \beta - (d + e - cz)$.

18. The program according to claim 15 or 16, wherein a relationship between said a and b is $a:b=1:1.5-3$.

19. The program according to claim 15 or 16, wherein said "a" is in a range as follows: $5days \leq a \leq 60days$.

20. The program according to claim 15 or 16, further comprising the step of:

setting an alarm criteria range based upon said basic stock β , and

monitoring a total of shipping quantities in a period from a basic alarm time to “c” days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning.

21. The program according to claim 15 or 16, further comprising the steps of:

setting an alarm criteria range based upon said basic stock β , and monitoring a total of shipping quantities in a period from a basic alarm time to “c” days after the basic alarm time, when the total is beyond the alarm criteria range issuing an warning; and

recalculating, when the warning is issued, said basic stock and/or said order point to reconfigure them.